April 1, 2010
Lit. No. 40693, Rev. 02

BLIZZARD®
SNOWPLOWS

7600HD, 8000HD, 8600HD & 9000HD
Straight Blade Snowplows

Installation Instructions

⚠ CAUTION

Read this document before installing the snowplow.

⚠ CAUTION

See your BLIZZARD® outlet/Web site for specific vehicle application recommendations before installation. The Undercarriage Selection Guide has specific vehicle and snowplow requirements.

A DIVISION OF DOUGLAS DYNAMICS, L.L.C.

SAFETY DEFINITIONS

⚠ WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

⚠ CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE: Indicates a situation or action that can lead to damage to your snowplow and vehicle or other property. Other useful information can also be described.

WARNING/CAUTION & INSTRUCTION LABELS

Become familiar with and inform users about the warning and instruction labels on the back of the blade.

NOTE: If labels are missing or cannot be read, see your sales outlet.

⚠ WARNING

LOWER BLADE WHEN VEHICLE IS PARKED.

DO NOT EXCEED GVWR OR GAWR INCLUDING BLADE AND BALLAST.

REMOVE BLADE ASSEMBLY BEFORE PLACING VEHICLE ON HOIST.

⚠ CAUTION

READ *OWNER'S MANUAL* BEFORE OPERATING OR SERVICING SNOWPLOW.

TRANSPORT SPEED SHOULD NOT EXCEED 45 MPH. FURTHER REDUCE SPEED UNDER ADVERSE TRAVEL CONDITIONS.

PLOWING SPEED SHOULD NOT EXCEED 10 MPH.

SEE YOUR SALES OUTLET/WEB SITE FOR SPECIFIC VEHICLE APPLICATION RECOMMENDATIONS.

59900

ATTACH

1. Slowly drive vehicle forward to engage **mount adapter** into **A-frame.**
2. Turn **power switch** to center or "OFF" position.
3. Plug in electrical harnesses.
4. Push and hold **power switch** RIGHT and push UP and hold **arm/blade operation switch. Arm** will engage **mount adapter** and pull snowplow toward vehicle.
5. Rotate and release **hitch pin. Hitch pin** is fully engaged when **pin handle** is against the **pin guide plate.**
6. Repeat Step 5 on passenger's side. Rotate and release **hitch pin. Hitch pin** is fully engaged when **pin handle** is against the **pin guide plate.**
7. While holding **power switch** RIGHT, push DOWN and hold **arm/blade operation switch. Arm** will disengage **mount adapter** to relieve tension on the **stand.**
8. Pull **stand handle** up. **Stand** will lift off ground. Pull **stand pin** out. Rotate **stand** up until **stand pin** seats into **upper hole. Pin** must lock into upper **A-frame** hole.
9. Repeat Step 8 on passenger's side. Pull **stand handle** up. **Stand** will lift off ground. Pull **stand pin** out. Rotate **stand** up until **stand pin** seats into **upper hole. Pin** must lock into upper **A-frame** hole.
10. Turn **power switch** to left or "Plowing" position.

POWER HITCH 2

⚠ WARNING: Keep fingers away from snowplow and truck attachment points. POWER HITCH™ 2 arm raises behind undercarriage pushbeam.

DETACH

1. Lower snowplow onto ground with **blade** straight. Turn plow control in cab to "OFF" position.
2. Turn **power switch** to center or "OFF" position.
3. While holding the **power switch** RIGHT, push DOWN and hold the **arm/blade operation switch. Arm** will disengage **mount adapter** to relieve tension on the **stand.**
4. Pull **stand pin** out. Rotate **stand** down until **stand pin** seats into lower **A-frame** hole. Push down on top of **shoe. Shoe** will be on the ground.
5. Repeat Step 4 on passenger's side. Pull **stand pin** out. Rotate **stand** down until **stand pin** seats into lower **A-frame** hole. Push down on top of **shoe. Shoe** will be on the ground.
6. Push and hold **power switch** RIGHT and push UP the **arm/blade operation switch. Arm** will engage **mount adapter** and pull snowplow tightly to vehicle.
7. Rotate and pull **hitch pin.** Rotate **hitch pin** into retracted position.
8. Repeat Step 7 on passenger's side. Rotate and pull **hitch pin.** Rotate **hitch pin** into retracted position.
9. While holding **power switch** RIGHT, push DOWN and hold **arm/blade operation switch** to fully lower **arm.**
10. Unplug electrical harnesses.

BLIZZARD

Read Owner's Manual for Complete Instructions.

U.S. Patents 5,420,480; 5,638,618; 5,899,007; 6,178,669; 6,253,470; 6,276,076; 6,393,737; 6,408,549; 6,412,199; 6,442,877; 6,615,513; 7,134,227; 7,400,058; 7,430,821; RE35,700; CAN Patents 2,060,425; 2,184,922; 2,229,783; 2,259,508; 2,358,145; 2,358,354; 2,466,195; 2,552,633; and other patents pending.

49443

⚠ WARNING

Crush hazard

Keep feet clear

29256

SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury and/or equipment and property damage. Read and understand labels and the Owner's Manual before installing, operating or making adjustments.

⚠ WARNING

Lower blade when vehicle is parked. Temperature changes could change hydraulic pressure, causing the blade to drop unexpectedly or damaging hydraulic components. Failure to do this could result in serious personal injury.

⚠ WARNING

The driver shall keep bystanders clear of the blade when it is being raised, lowered or angled. Do not stand between the vehicle and the blade or within 8 feet of a moving blade. A moving or falling blade could cause personal injury.

⚠ WARNING

Keep hands and feet clear of the blade and A-frame when mounting or removing the snowplow. Moving or falling assemblies could cause personal injury.

⚠ WARNING

Do not exceed GVWR or GAWR including the blade and ballast. The rating label is found on the driver-side vehicle door cornerpost.

⚠ WARNING

To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.

⚠ WARNING

Remove blade assembly before placing vehicle on hoist.

⚠ CAUTION

Overtightening springs will not increase blade trip force and can damage the springs.

⚠ CAUTION

Refer to the Undercarriage Selection Guide for minimum vehicle recommendations and ballast requirements.

HYDRAULIC SAFETY

⚠ WARNING

Hydraulic fluid under pressure can cause skin injection injury. If you are injured by hydraulic fluid, get medical attention immediately.

- Always inspect hydraulic components and hoses before using. Replace any damaged or worn parts immediately.
- If you suspect a hose leak, DO NOT use your hand to locate it. Use a piece of cardboard or wood.

FUSES

The BLIZZARD® electrical and hydraulic systems contain several blade-style automotive fuses. If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire. Fuse Replacement, including fuse ratings and locations, is located in the Maintenance Section of the Owner's Manual.

PERSONAL SAFETY

- Remove ignition key and put the vehicle in park or in gear to prevent others from starting the vehicle during installation or service.
- Wear only snug-fitting clothing while working on your vehicle or snowplow.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

FIRE AND EXPLOSION

⚠ WARNING

Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate Mobile Communication Equipment such as cell phones or two-way radios.

VENTILATION

⚠ WARNING

Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.

BATTERY SAFETY

⚠ CAUTION

Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.
Batteries contain sulfuric acid which burns skin, eyes and clothing.
Disconnect the battery before removing or replacing any electrical components.

TORQUE CHART

⚠ CAUTION

Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to the torque chart. Use standard methods and practices when attaching snowplow including proper personal protective safety equipment.

Recommended Fastener Torque Chart (ft-lb)

Size	SAE Grade 2	SAE Grade 5	SAE Grade 8
1/4-20	6	9	13
5/16-18	11	18	28
3/8-16	19	31	46
3/8-24	24	46	68
7/16-14	30	50	75
1/2-13	45	75	115
9/16-12	66	110	165
5/8-11	93	150	225
3/4-10	150	250	370
7/8-9	150	378	591
1-8	220	583	893

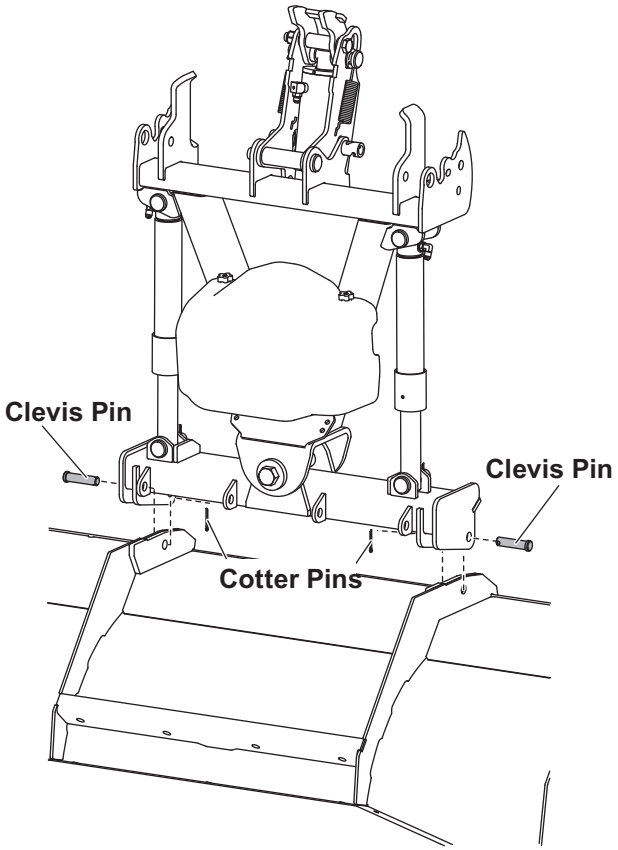
Metric Grade 8.8 (ft-lb)

Size	Torque	Size	Torque
M 6	7	M 12	60
M 8	17	M 14	95
M 10	35	M 16	155

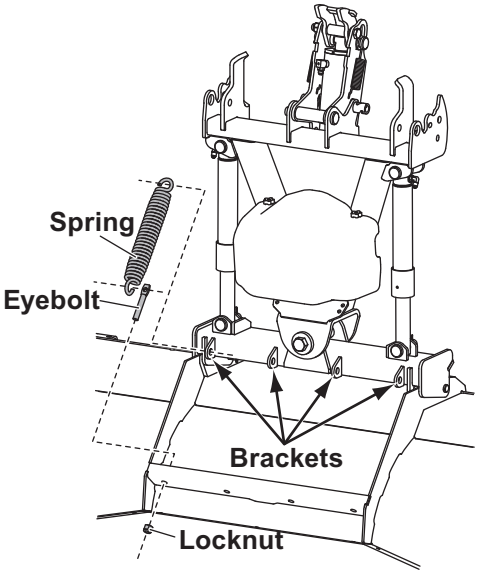
These torque values apply to fasteners except those noted in the instruction.

BLADE TO A-FRAME

1. Place some cardboard or wood on the floor where the blade will be assembled. Remove the blade from the pallet and place it face down. Position the A-frame assembly onto the blade, aligning the pivot beam holes with the pivot holes in the blade. Insert two 3/4" x 6" clevis pins from the outside. Secure the pivot beam by installing 1/4" x 2" cotter pins in the two clevis pins.



2. Hook a spring to each of the pivot beam brackets indicated in the diagram. Hook an eyebolt to the other end of each trip spring.



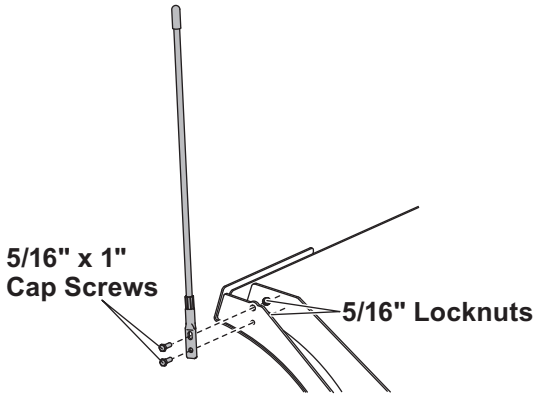
3. Push the threaded ends of the eyebolts through the holes in the spring bar on the blade. Attach a 5/8" locknut to each eyebolt.

⚠ CAUTION

Overtightening springs will not increase blade trip force and can damage the springs.

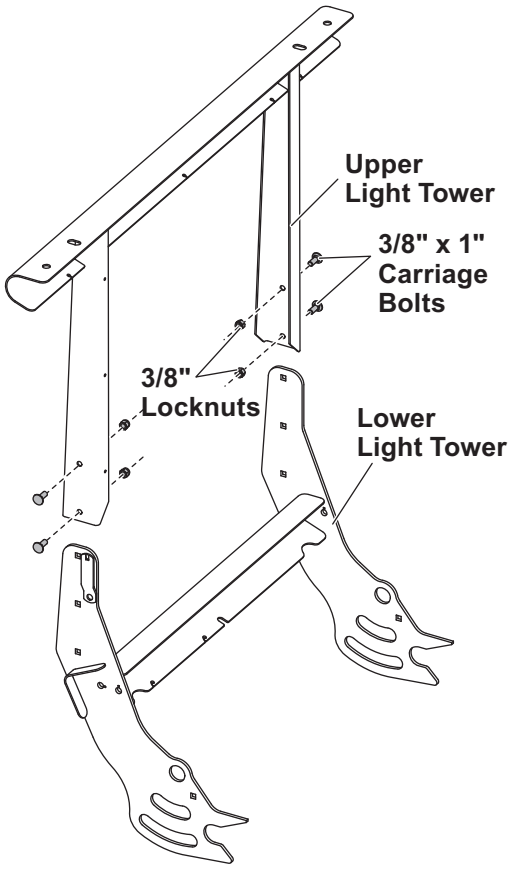
4. Tighten the locknuts until the coils of the trip springs begin to separate (a piece of paper should pass between the second and third coils).

5. Stand the blade and A-frame assembly upright and support it in a level position using a block under the main A-frame tube. Install the blade guides using 5/16" x 1" cap screws and 5/16" locknuts.



UPPER TO LOWER LIGHT TOWER ASSEMBLY

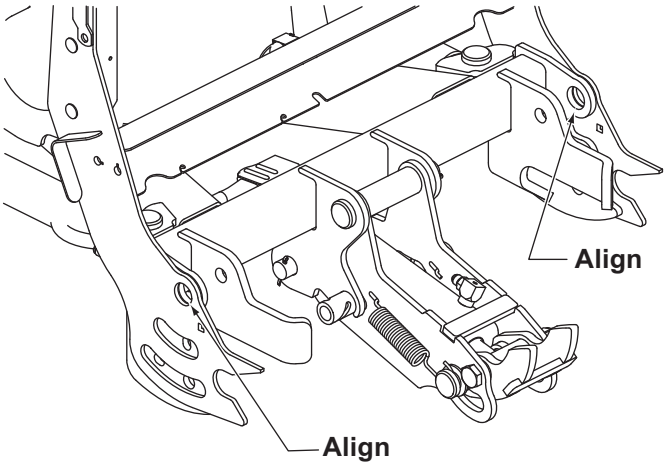
1. Position the upper light tower between the lower light tower side plates and align the holes.



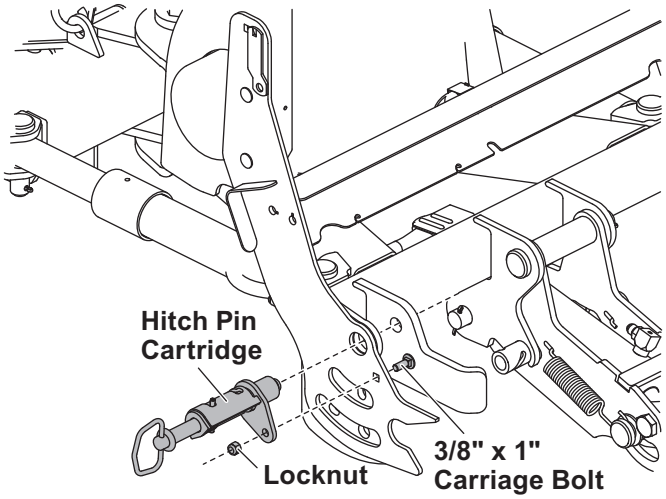
2. Secure with four 3/8" x 1" carriage bolts and locknuts assembled from the outside in.

LIGHT TOWER TO A-FRAME ASSEMBLY

1. Position the light tower at the rear of the A-frame, aligning the hitch pin holes on the light tower with the hitch pin holes on the A-frame.



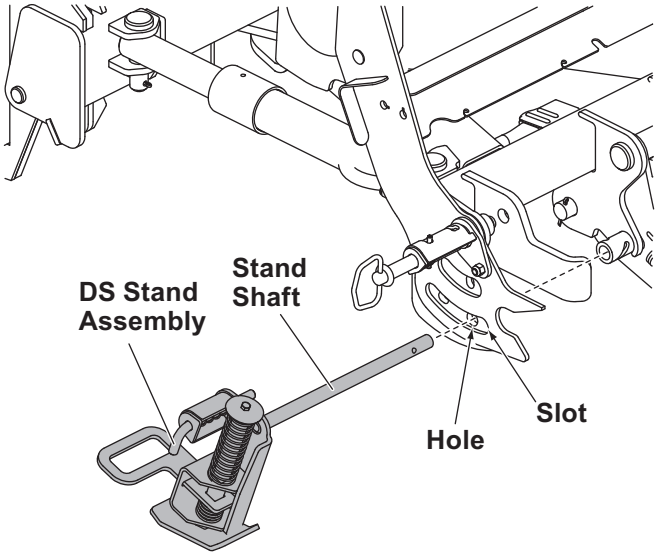
2. Insert the hitch pin cartridge through the hitch pin holes on the driver's side. Secure with a 3/8" x 1" carriage bolt and a 3/8" locknut assembled from the inside out. Repeat on the passenger's side.



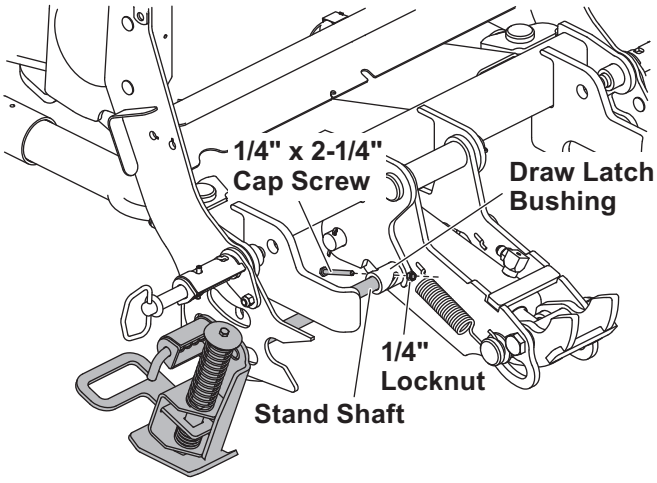
3. Tip the light tower toward the blade assembly.

STAND ASSEMBLY TO A-FRAME ASSEMBLY

1. Guide the driver-side stand shaft through the driver-side lower light tower slot and through the rearward lower A-frame holes.

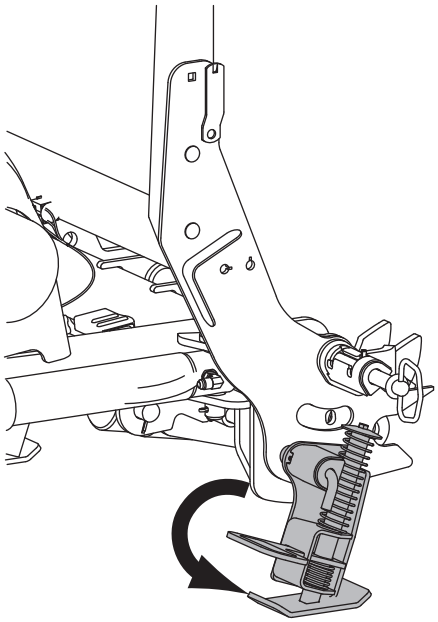


2. Lubricate the end of the shaft with general purpose petroleum grease. Guide the stand shaft into the draw latch bushing. Secure with 1/4" x 2-1/4" cap screw and 1/4" locknut. Do not fully tighten the 1/4" locknut. The cap screw must move freely through the slot in the draw latch bushing.



3. Repeat Steps 1 and 2 on the passenger-side stand installation.

4. Rotate the light tower to the upright position. Pull the stand pin out and rotate the stand assembly until the stand pin passes through the bottom slot in the light tower and engages the bottom hole in the A-frame.

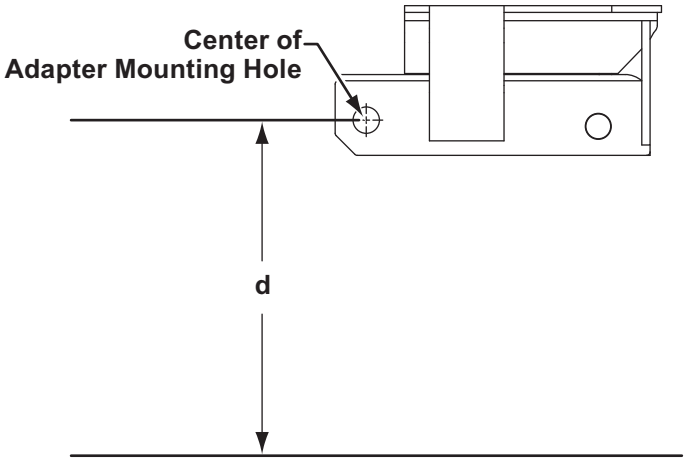


5. Repeat for other stand.

MOUNT ADAPTER INSTALLATION

1. Before assembling the mount adapter to the vehicle undercarriage, determine if the height adjustment plates are needed.

2. Prior to measuring the vehicle undercarriage height, the undercarriage must be installed, and ballast must be installed if required. Park the vehicle on a level surface. Measure the distance from the ground to the center of the adapter mounting hole on the undercarriage.



Refer to the chart below to determine if height adjustment plates are required and, if so, which plate to install.

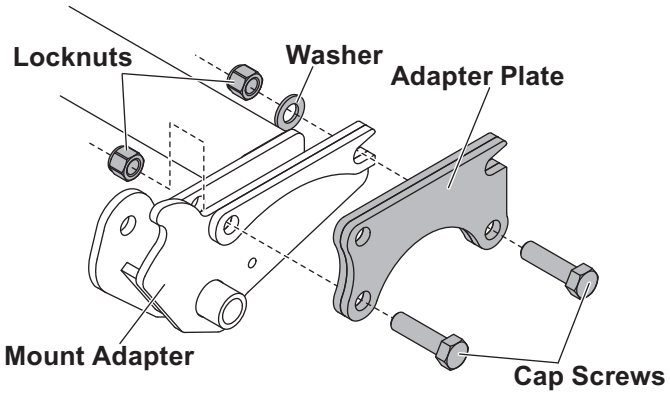
3. Use dimension "d" from Step 2 and follow the chart below:

Height Adjustment Plate Selection Chart	
Dimension "d"	**Height Adapter Plate Required**
12.5" – 14.0"	None
14.0" – 15.5"	Height Adjustment Plate (Short)
15.5" – 17.0"	Height Adjustment Plate (Tall)

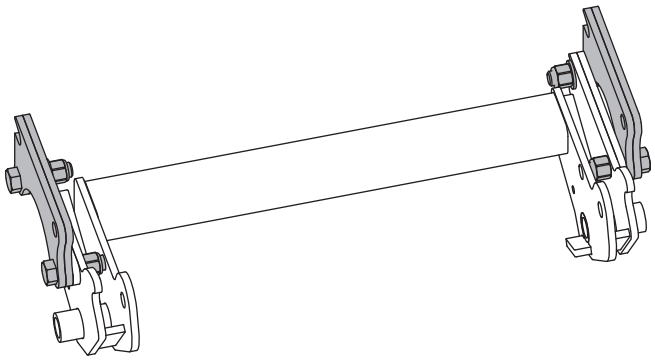
If adapter plates are required, install as follows:

4. Position the adapter plate against the driver's side portion of the mount adapter as shown. Insert a 3/4" x 2-3/4" cap screw through the lower front adapter plate hole and through the appropriate hole on the mount adapter. Secure with a locknut.

   Insert a cap screw through the rear adapter plate hole, through the slot on the mount adapter and through a washer. Secure with a locknut.



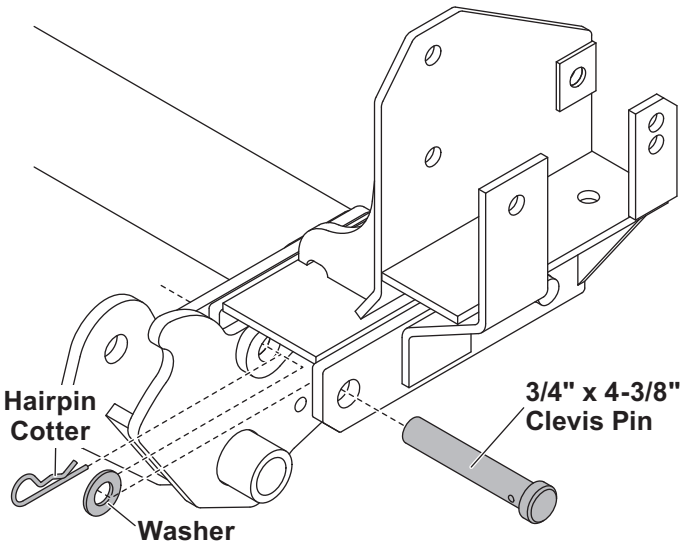
   Repeat for the passenger's side. Tighten all four fasteners according to the torque chart.



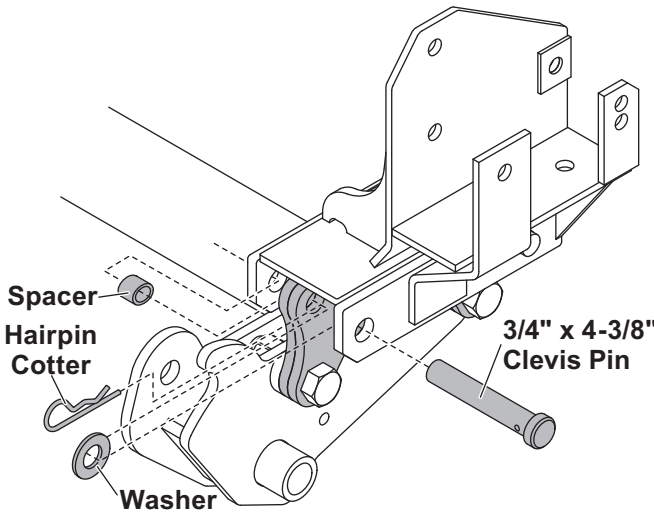
5. Position the mount adapter between the undercarriage brackets on each side. Align the notches in rear of the mount adapter with pins in vehicle undercarriage. Insert a 3/4" x 4-3/8" clevis pin through the outer mount hole, then through a 3/4" washer. Rotate the mount adapter into place and insert clevis pin fully, securing with the hairpin cotter. Repeat for the opposite side.

6. If adapter plates are used, insert a spacer between the adapter plate and the inner side plate of the undercarriage when inserting the clevis pin.

NOTE: If mount adapter does not rotate into position, loosen mount hardware, secure mount adapter into position and retighten mount hardware.



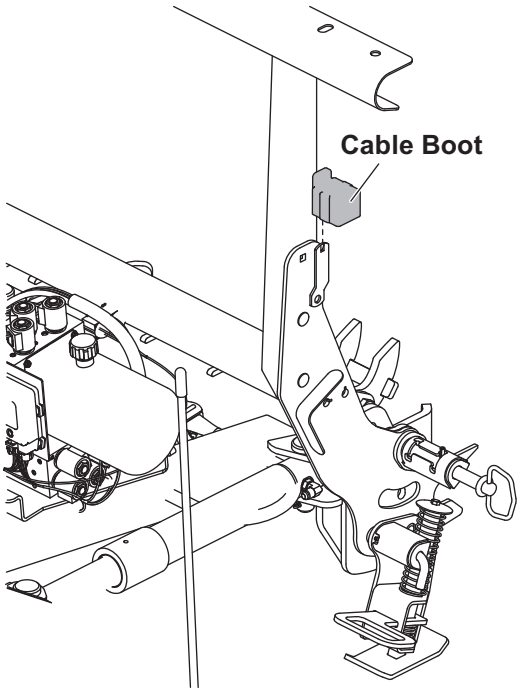
Shown without adapter plate



Shown with adapter plate installed

HYDRAULIC UNIT PREPARATION

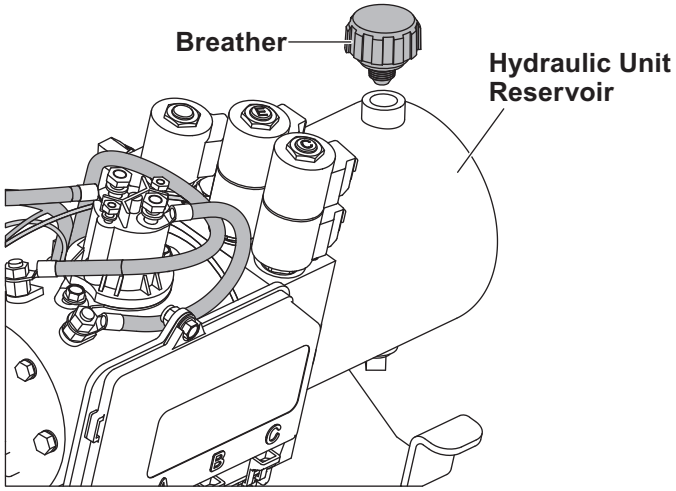
1. Install the power cable boot on the driver-side light tower upright.



2. Remove the hydraulic unit cover.

3. Uncoil the plow battery cable harness and route under the lower light tower support and up to the cable boot.

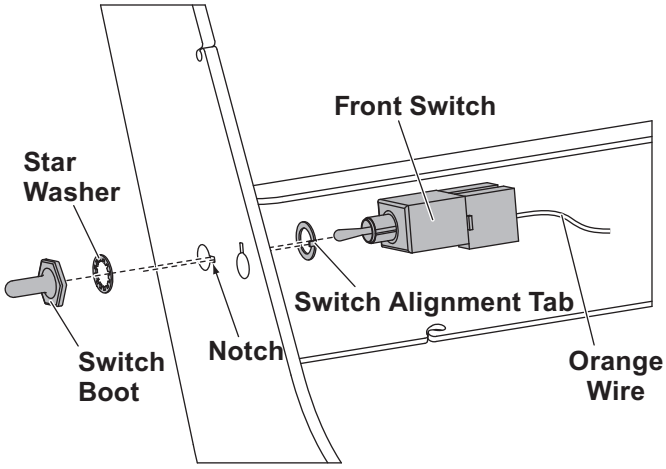
4. Locate the bagged breather assembly. The hydraulic system is supplied with the correct amount of fluid. Slowly loosen the pipe plug on the top of the reservoir to relieve any pressure, then discard it. Install the breather into the reservoir.



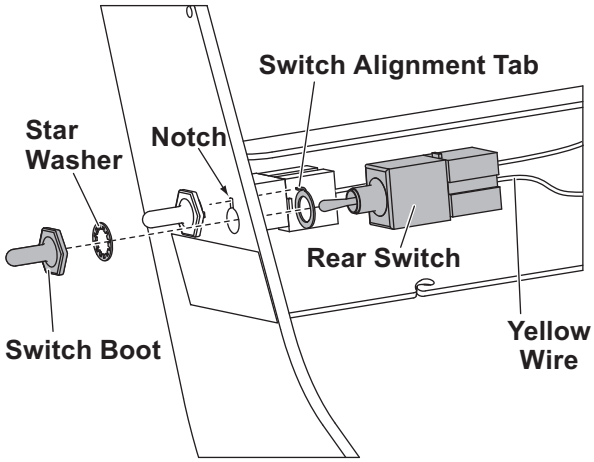
5. Route the switch harness under the lower light tower support and up to the switch holes on the driver's side of the light tower.

6. Determine where each switch will be mounted. The "Momentary ON, OFF, ON" switch, with the orange wire running to it, is mounted in the switch hole closest to the blade. The "Momentary ON, OFF, Momentary ON" switch, with the yellow wire running to it, is mounted in the switch hole farthest from the blade.

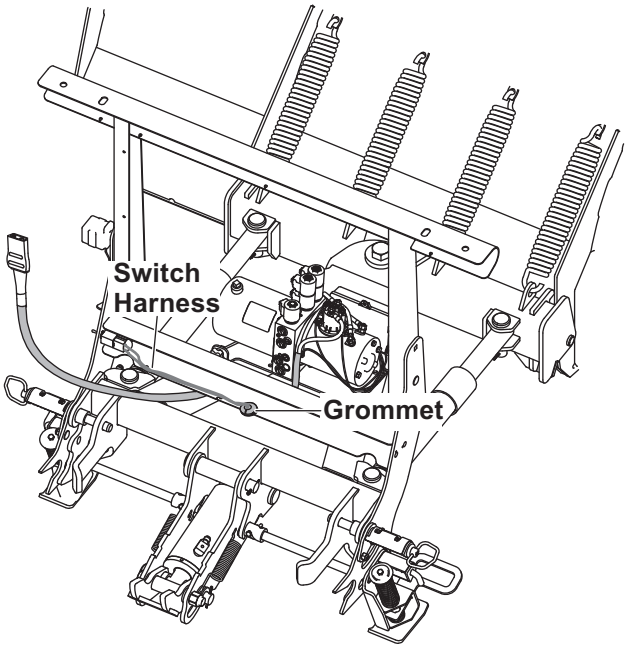
7. Position the tab of the alignment washer onto the "Momentary ON, OFF, ON" switch making sure the tab is in line with the switch alignment tab. Route the "Momentary ON, OFF, ON" switch through the hole closest to the blade making sure that the switch and washer alignment tabs align with the notch in the light tower. Secure with a star washer and switch boot. Tighten switch boot until switch is fimrly in place (see illustration).



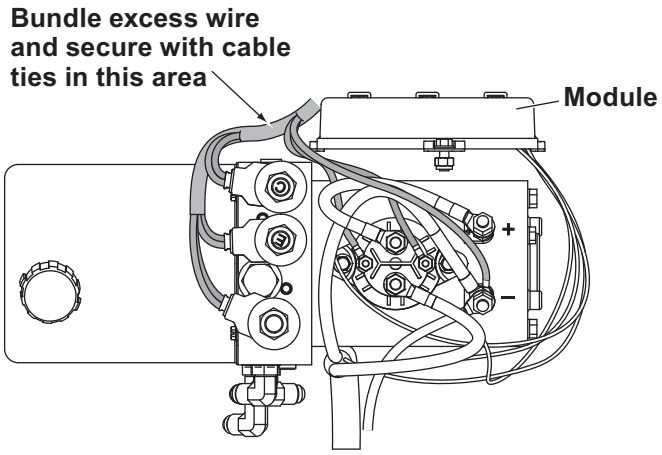
8. Repeat for the "Momentary ON, OFF, Momentary ON" switch in the hole farthest from the blade.



9. Insert the rubber grommet from the parts bag into the notch in the light tower support. Route the harness through the grommet.



10. Bundle the remaining loose wires at the hydraulic unit with cable ties in the areas shown.



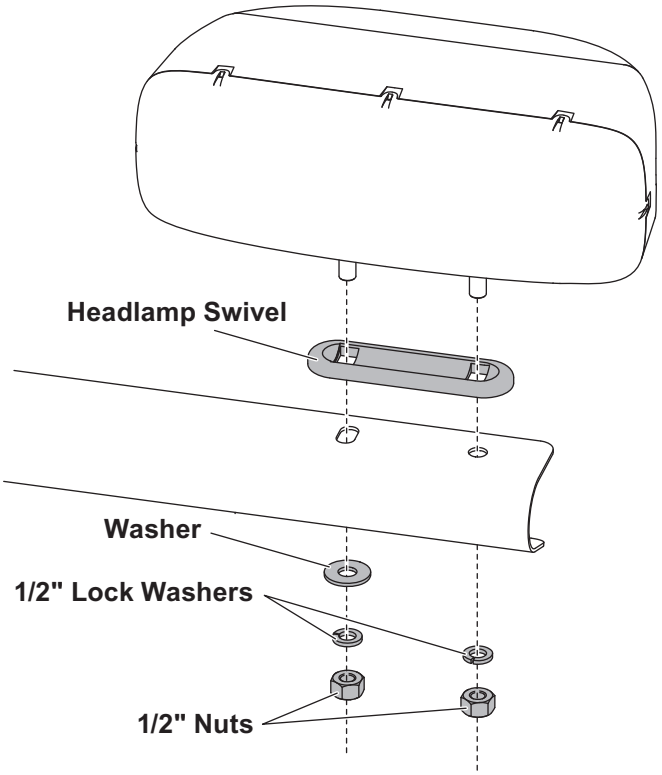
HEADLAMP INSTALLATION

⚠ WARNING

Your vehicle must be equipped with snowplow headlamps and directional lights.

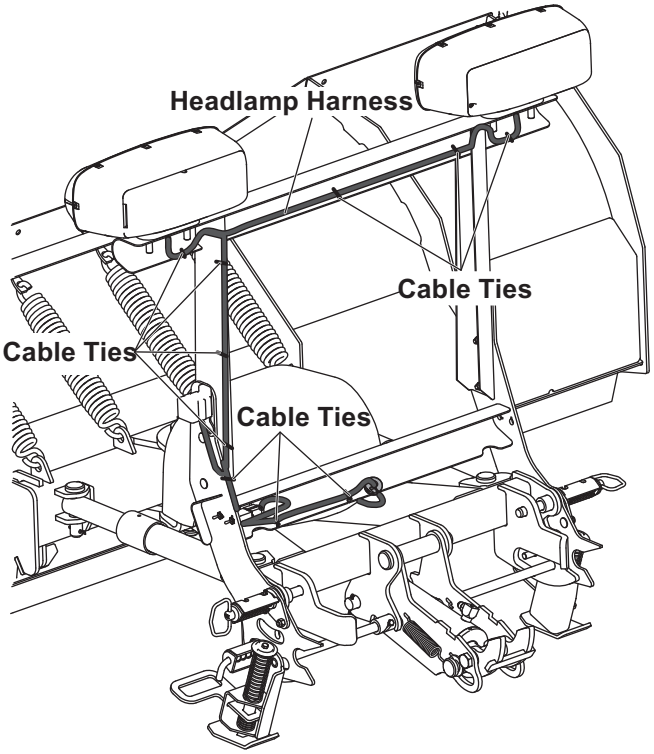
The headlamps and hardware are found in the headlamp box.

1. With the wire harness behind the light tower, attach the headlamps to the holes in the headlamp channel with the headlamp swivel on top and the washer, lock washer and nuts underneath as shown.



2. Reinstall the cover.

3. Use cable ties to retain the switch harness, headlamp harness and the vehicle power cables.



FINAL INSPECTION AND ADJUSTMENT

1. Measure the height at the center of the mount adapter hitch pin hole.

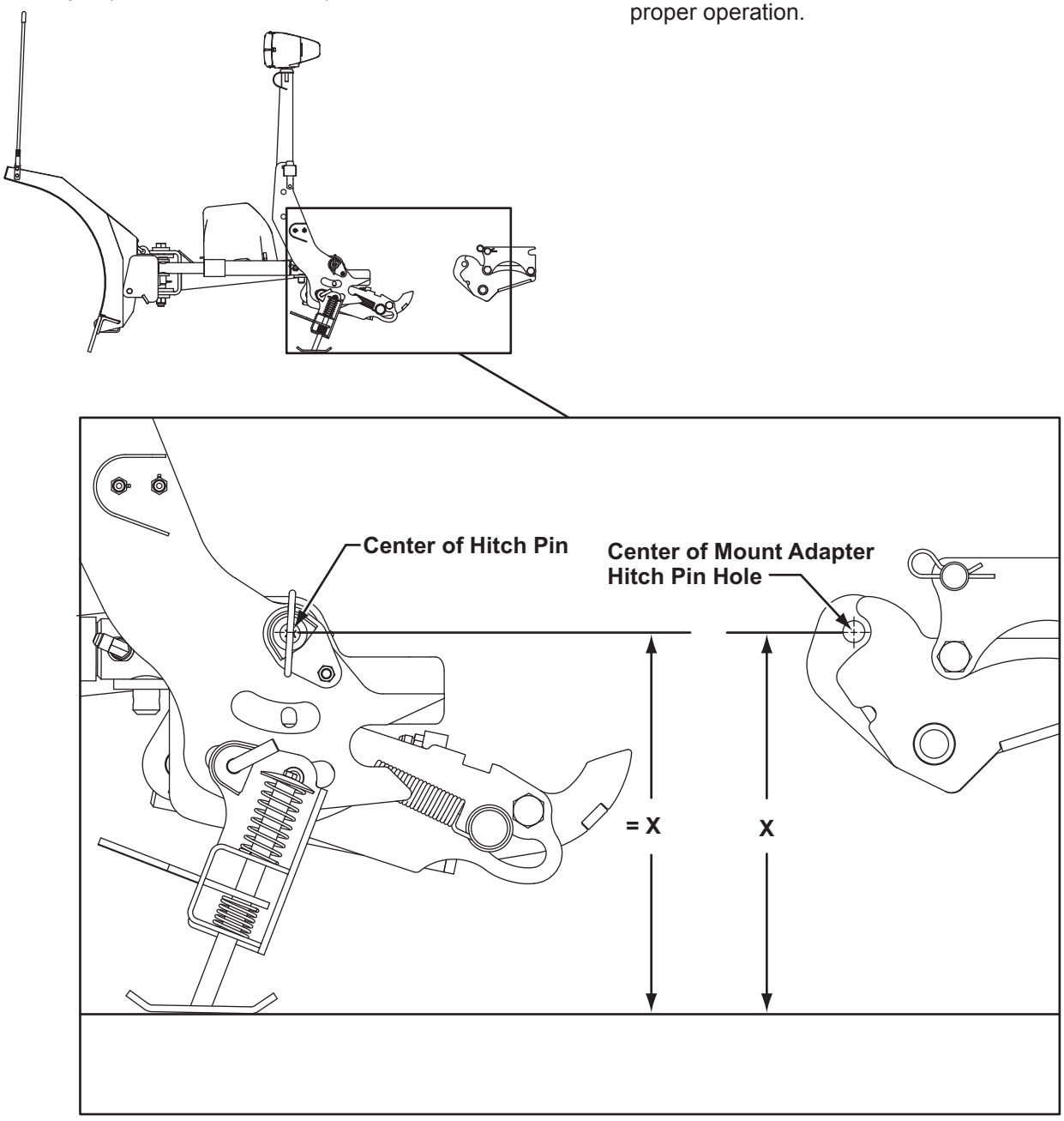
2. Position a floor jack under the rear of the A-frame. With the stand in the lowered, locked position, elevate the rear of the snowplow until the center of the hitch pin dimension equals the dimension from Step 1 (see illustration below).

3. Push the stand shoe down until it contacts the ground. Repeat on the other side.

4. Lower the snowplow onto the stands and remove the floor jack.

5. Attach the snowplow to the vehicle per the system instructions located on the back of the blade.

6. Run the blade through all functions to verify proper operation.



BLADE DROP SPEED ADJUSTMENT

⚠ WARNING

Keep 8' clear of the blade drop zone when it is being raised, lowered or angled. Do not stand between the vehicle and blade or directly in front of blade. If the blade hits you or drops on you, you could be seriously injured.

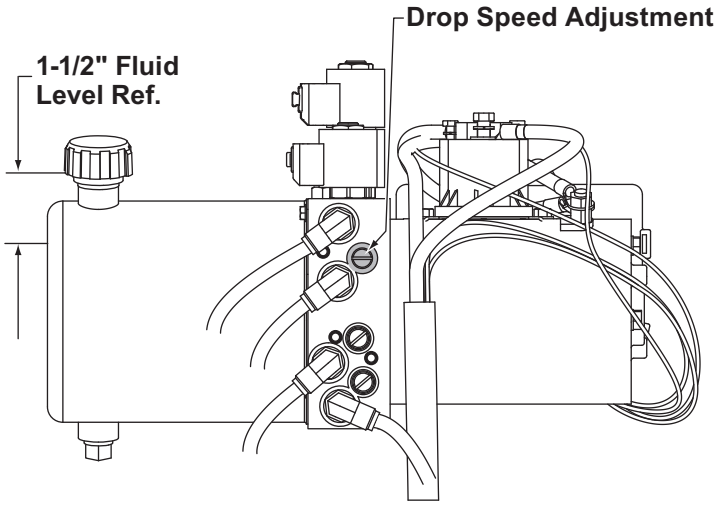
1. The plow drop speed may be adjusted by turning the needle valve.

NOTE: The blade will not drop when drop speed needle valve is fully tightened (clockwise). Turn OFF the plow control, turn the needle valve 1/8 turn outward (counterclockwise), then proceed with blade drop speed adjustment.

2. Lower the blade to the ground before making adjustment.

3. Turn the needle valve inward (clockwise) to decrease the drop speed. Turn the needle valve outward (counterclockwise) to increase the drop speed.

4. Stand 8' clear of the blade drop zone when checking adjustment.



VEHICLE LIGHTING CHECK

1. Verify the operation of all vehicle front lighting prior to connecting the snowplow harness.

2. Check the operation of the snowplow lights with snowplow mounted to vehicle and all harnesses connected.

Turn signals and parking lamps

Parking lamps ON:
- Both vehicle and snowplow parking lamps should be ON at the same time.

Driver-side turn signal ON:
- Both vehicle and snowplow driver-side turn signal lamps should flash at the same time.

Passenger-side turn signal ON:
- Both vehicle and snowplow passenger-side turn signal lamps should flash at the same time.

Headlamps

Move vehicle headlamp switch to the "ON" position. Connecting and disconnecting the snowplow lighting harness plug should switch the lights between vehicle and snowplow as follows:

Snowplow lighting harness DISCONNECTED:
- Vehicle headlamps should be ON.
- Snowplow headlamps should be OFF.

Snowplow lighting harness CONNECTED:
- Snowplow headlamps should be ON.
- Vehicle headlamps should be OFF.

Dimmer switch should toggle headlamps between high and low beams. The high beam indicator on the dash should light when headlamps are placed in high beam.

Daytime Running Lamps (DRLs)

An operational check of the vehicle and snowplow DRLs will depend on the vehicle model, vehicle DRL system and type of Isolation Module installed. Due to the variations in the OEM DRL systems and the different Isolation Module options available, checking the functionality of the snowplow DRLs will depend on the type of module installed on the vehicle.

With headlamp switch OFF, activate the vehicle DRLs.

Snowplow lighting harness DISCONNECTED:
- Vehicle DRLs should be ON.
- Snowplow headlamps should be OFF.

Snowplow lighting harness CONNECTED and vehicle in DRL mode:
- Check snowplow DRL function per the type of Isolation Module installed.

Refer to the Mechanic's Guide for information on the Isolation Module DRL functions.

Hand-Held Control

The snowplow plugs **do** need to be connected to the vehicle harness connectors. The control power indicator light should light whenever the control ON/OFF switch and the ignition (key) switches are both in the "ON" position.

3. Connect all snowplow and vehicle harnesses. Raise the snowplow and aim snowplow headlamps according to the Snowplow Headlamp Beam Aiming instructions included with the headlamps and any state or local regulations.

4. Check aim of vehicle headlamps with snowplow removed.

⚠ CAUTION

On 2-Plug electrical systems, plug covers shall be used whenever snowplow is disconnected. Vehicle Battery Cable is 12-volt unfused source.

5. When the snowplow is removed from the vehicle, install plug covers on the vehicle battery cable and lighting harness. Insert the snowplow battery cable and lighting harness into the cable boot on the snowplow.

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